REMARKS

This is a response to the office action mailed March 16, 2005. In the office action the Examiner rejected claims 1-16 under 102(b) as being anticipated by Kawabata *et al.* (US 5,198,970). Applicants respectfully traverse the rejections.

Claim 1 recites:

> 1. (Original) A power conversion device, comprising:
>
> a multilevel converter configurable to convert an input waveform having a first frequency into a second waveform having a second frequency, wherein the second frequency is higher than the first frequency;
>
> a transformer coupled to the multilevel converter and configurable to transform the second waveform from a first voltage level to a second voltage level, wherein the first voltage level is higher than the second voltage level; and
>
> a switched inverter circuit coupled to the transformer and configurable to convert the transformed, second waveform into a third waveform for use with a power application.

These claimed features utilize a multilevel converter to synthesize a staircase voltage waveform from several levels of dc capacitor voltages. The multilevel converter makes the power conversion device suitable for direct connection to high-power distribution voltage levels using high-voltage silicon devices (*e.g.*, IGBT devices). For example, the multilevel converter is suitable for distribution applications where the voltage levels are 4.16KV, 13.8KV, 12.47KV.

By contrast, Kawabata discloses a conventional diode bridge rectifier 11-B that is not capable of providing several levels of dc capacitor voltages (see single capacitor C_D) and is, therefore, only suitable for a low voltage application line (*e.g.*, 480V). Unlike Kawabata's conventional diode bridge rectifier 11-B, the multilevel converter provides an active front end that allows bidirectional power flow and thus allows input current shaping that yields a pure sinusoidal wave for the input current. The active control also allows reactive power flow control by shifting the input current phase angle. These functionalities cannot be obtained from the conventional diode bridge rectifier 11-B disclosed by Kawabata which is only capable of providing power flow in a single direction.

Additionally, the claimed multilevel converter and switch inverter also provide flexibility not present in Kawabata's converter 11. For example, the claimed multilevel converter and the switched inverter are capable of reversing roles to enable the power flow to be reversed from secondary to primary. That is, the switched inverter can be used as a multilevel converter and the multilevel converter can be used as a switched inverter depending upon the desired direction of power flow.

Lastly, to avoid switch-dead-time-related waveform distortion the claimed multilevel converter provides a DC bus voltage that is higher than the peak AC voltage. By contrast, Kawabata's converter 11 will not allow the AC output voltage to produce an output that has a magnitude that is the same or higher than the input voltage level because the rectifier output voltage is less than the peak input voltage. Thus, Kawabata fails to show or suggest "transforming the second waveform from a first voltage level to a second voltage level, wherein the first voltage level is higher than the second voltage level," as claimed.

The failure of Kawabata to disclose each and every element of claim 1 vitiates any basis for rejection of claim 1 under 35 U.S.C. 102(b). Applicants respectfully request the Examiner to withdrawal the rejection of claim and allow claim 1 without amendment.

Claims 2-13 depend from claim 1 and include all the limitations of claim 1. Therefore, Applicants respectfully request allowance of claims 2-13 for at least the same reasons as claim 1 and for the independent subject recited therein.

Claim 14 recites:

> 14. (Original) A method of converting power, comprising:
> converting an input waveform having a first frequency into a second waveform having a second frequency, wherein the second frequency is higher than the first frequency;
>
> transforming the second waveform from a first voltage level to a second voltage level, wherein the first voltage level is higher than the second voltage level; and
>
> converting the transformed, second waveform into a third waveform for use with a power application.

Kawabata fails to disclose or suggest "transforming the second waveform from a first voltage level to a second voltage level, wherein the first voltage level is higher than the second voltage level," as claimed. As previously argued with respect to claim 1, Kawabata discloses a completely different configuration than the claimed invention by using a diode bridge rectifier 11-B. The diode bridge rectifier 11-B uses a single DC capacitor voltage C_D, which does not provide a higher voltage than the peak AC output voltage.

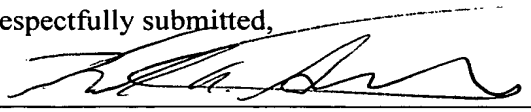
The failure of Kawabata to disclose each and every element of claim 14 vitiates any basis for rejection of claim 14 under 35 U.S.C. 102(b). Applicants respectfully request the Examiner to withdrawal the rejection of claim and allow claim 14 without amendment.

Claims 15-16 depend from claim 14 and include all the limitations of claim 14. Therefore, Applicants respectfully request allowance of claims 15-16 for at least the same reasons as claim 14 and for the independent subject recited therein.

In light of the above remarks, the Applicants respectfully request that the Examiner reconsider this application with a view towards allowance. The Examiner is invited to call the undersigned attorney at (650) 843-7527, if a telephone call could help resolve any remaining items.

Respectfully submitted,

Date: June 16, 2005



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